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Preface

This special issue contains 12 submitted papers selected from the series of three International Conferences on Discovery Science which include 164 papers in total accepted and presented at these conferences. The first conference DS1998 was held in Fukuoka, December 1998 where 67 papers including five invited papers were presented. DS1999 was held in Kyoto, December 1999 where 57 papers including two invited papers were presented, and the third conference DS2000 was held in Kyoto December 2000 where 40 papers including three invited papers were presented. All papers except the invited ones were selected according to their relevance to the conferences, accuracy, significance, originality, and presentation quality by the program committees based on the referees' reports. From these submitted papers the Program Committee Chairs selected some of the best papers on theoretical aspects of Discovery Science, and all these papers were enlarged/revised for publication in TCS and subject to the standard refereeing procedure of TCS.

The conferences were organized as part of the activities of the Discovery Science Project sponsored by a Grant-in-Aid for Scientific Research on Priority Areas from the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan. That was a 4-year project started in April 1998 and completed in March 2002 that aimed to: (1) develop new methods for knowledge discovery, (2) install network environments for knowledge discovery, and (3) establish Discovery Science as a new area of Computer Science.

Thus Discovery Science ranges over philosophy, logic, reasoning, computational learning and system development so that the conferences focused on all the areas related to discovery including the following areas: logic for/of knowledge discovery, knowledge discovery by heuristic search, scientific discovery, knowledge discovery in databases, data mining, knowledge discovery in network environments, inductive logic programming, abductive reasoning, machine learning, constructive programming as discovery, intelligent network agents, knowledge discovery from unstructured and multimedia data, statistical methods for knowledge discovery, data and knowledge visualization, knowledge discovery and human interaction, and human factors in knowledge discovery.

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